40M	Ant0	5270	4.28	<=11	PASS
	Ant1	5270	4.51	<=11	PASS
	total	5270	7.41	<=11	PASS
	Ant0	5310	3.93	<=11	PASS
	Ant1	5310	3.72	<=11	PASS
	total	5310	6.84	<=11	PASS
	Ant0	5510	3.72	<=11	PASS
	Ant1	5510	4.12	<=11	PASS
	total	5510	6.93	<=11	PASS
	Ant0	5590	4.21	<=11	PASS
	Ant1	5590	6.97	<=11	PASS
	total	5590	8.82	<=11	PASS
	Ant0	5670	3.55	<=11	PASS
	Ant1	5670	4.11	<=11	PASS
	total	5670	6.85	<=11	PASS
	Ant0	5745.5	1.12	<=29.99	PASS
	Ant1	5745.5	1.17	<=29.99	PASS
	total	5745.5	4.16	<=29.99	PASS
	Ant0	5786.5	0.98	<=29.99	PASS
	Ant1	5786.5	0.29	<=29.99	PASS
	total	5786.5	3.66	<=29.99	PASS
	Ant0	5829.5	1.51	<=29.99	PASS
	Ant1	5829.5	0.07	<=29.99	PASS
	total	5829.5	3.86	<=29.99	PASS
10M	Ant0	5730.5	11.71	<=29.99	PASS
	Ant1	5730.5	11.01	<=29.99	PASS
	total	5730.5	14.38	<=29.99	PASS
	Ant0	5786.5	11.32	<=29.99	PASS
	Ant1	5786.5	10.81	<=29.99	PASS
	total	5786.5	14.08	<=29.99	PASS
	Ant0	5844.5	11.83	<=29.99	PASS
	Ant1	5844.5	10.16	<=29.99	PASS
	total	5844.5	14.09	<=29.99	PASS
1.4M	Ant0	5726.5	9.61	<=29.99	PASS
	Ant1	5726.5	8.73	<=29.99	PASS
	total	5726.5	12.203	<=29.99	PASS
	Ant0	5786.5	8.982	<=29.99	PASS
	Ant1	5786.5	8.382	<=29.99	PASS
	total	5786.5	11.703	<=29.99	PASS
	Ant0	5846.5	8.79	<=29.99	PASS
	Ant1	5846.5	8.372	<=29.99	PASS
	total	5846.5	11.596	<=29.99	PASS
1.4.M CA	Ant0	5728.12	10.183	<=29.99	PASS
	Ant1	5728.12	7.691	<=29.99	PASS
	total	5728.12	12.124	<=29.99	PASS
	Ant0	5788.12	8.809	<=29.99	PASS
	Ant1	5788.12	8.683	<=29.99	PASS
	total	5788.12	11.757	<=29.99	PASS
	Ant0	5848.12	9.134	<=29.99	PASS
	Ant1	5848.12	7.865	<=29.99	PASS
	total	5848.12	11.556	<=29.99	PASS
3M	Ant0	5727.5	8.127	<=29.99	PASS
	Ant1	5727.5	7.409	<=29.99	PASS
	total	5727.5	10.793	<=29.99	PASS
	Ant0	5787.5	6.814	<=29.99	PASS
	Ant1	5787.5	8.606	<=29.99	PASS
	total	5787.5	10.812	<=29.99	PASS
	Ant0	5844.5	7.628	<=29.99	PASS
	Ant1	5844.5	5.031	<=29.99	PASS

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	total	5844.5	9.531	<=29.99	PASS
3M CA	Ant0	5730.2	7.642	<=29.99	PASS
	Ant1	5730.2	5.709	<=29.99	PASS
	total	5730.2	9.792	<=29.99	PASS
	Ant0	5790.2	6.743	<=29.99	PASS
	Ant1	5790.2	5.163	<=29.99	PASS
	total	5790.2	9.035	<=29.99	PASS
	Ant0	5847.2	7.374	<=29.99	PASS
	Ant1	5847.2	4.431	<=29.99	PASS
	total	5847.2	9.157	<=29.99	PASS

Note：1.The Result and Limit Unit is dBm/500 kHz in the band 5.725–5.85 GHz.
2.The Duty Cycle Factor and RBW Factor is compensated in the graph.

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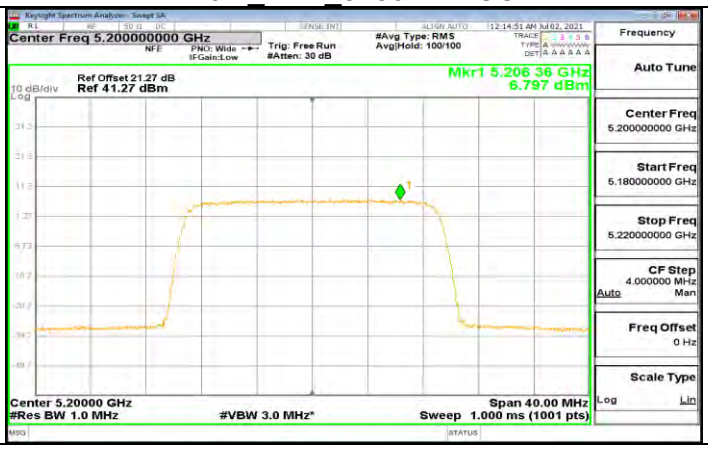
12.5.2. Test Graphs

20M_Ant0_5180 for FCC

20M_Ant1_5180 for FCC



20M_Ant0_5200 for FCC

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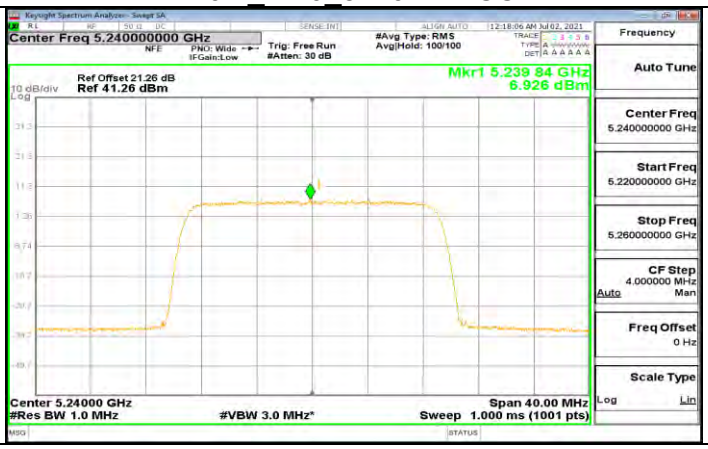
20M_Ant1_5200 for FCC

20M_Ant0_5240 for FCC



20M_Ant1_5240 for FCC

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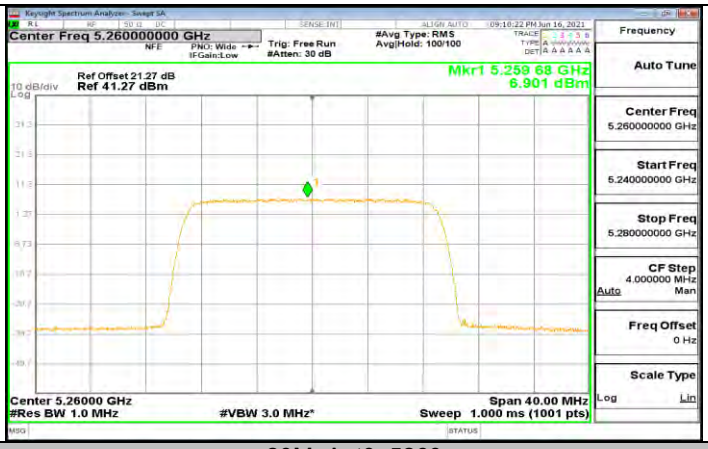
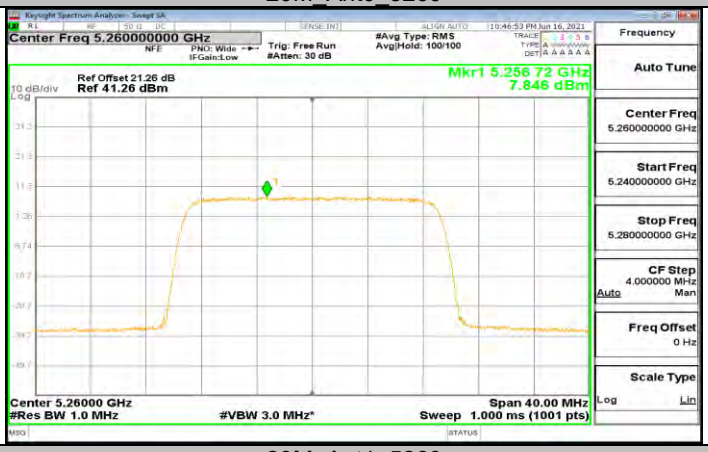


20M_Ant0_5260



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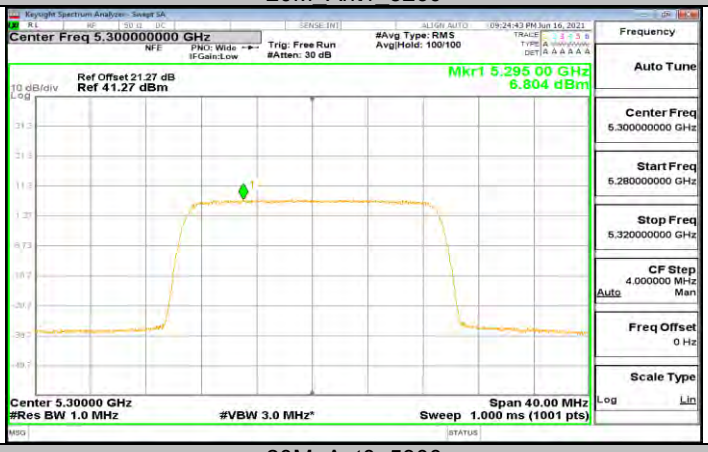

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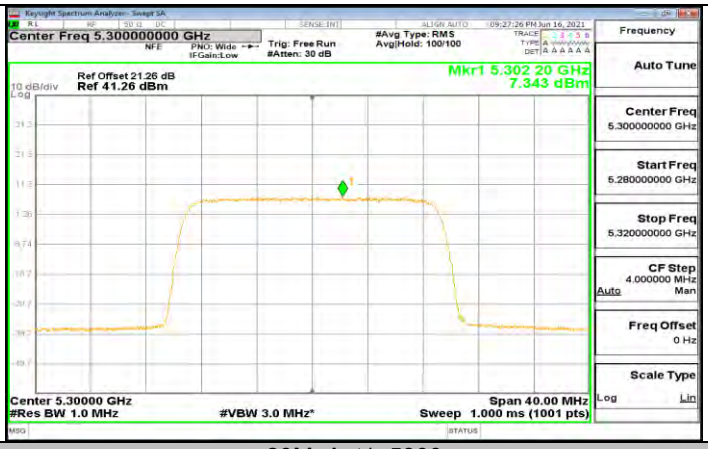

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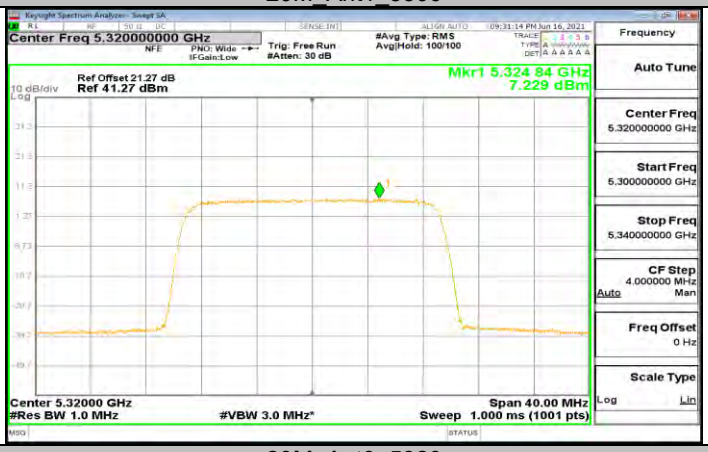

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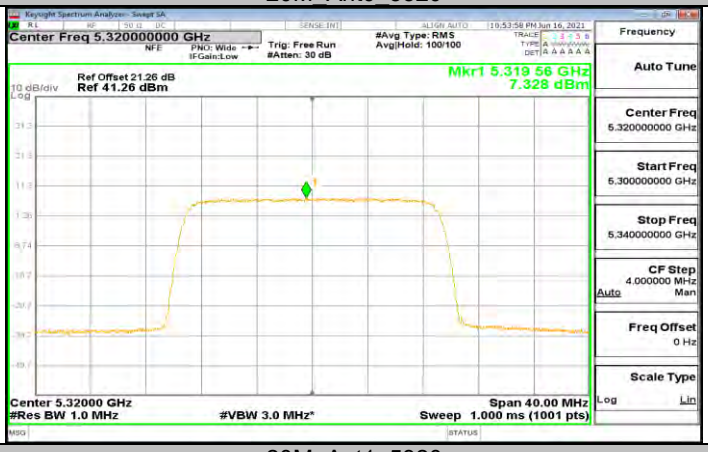

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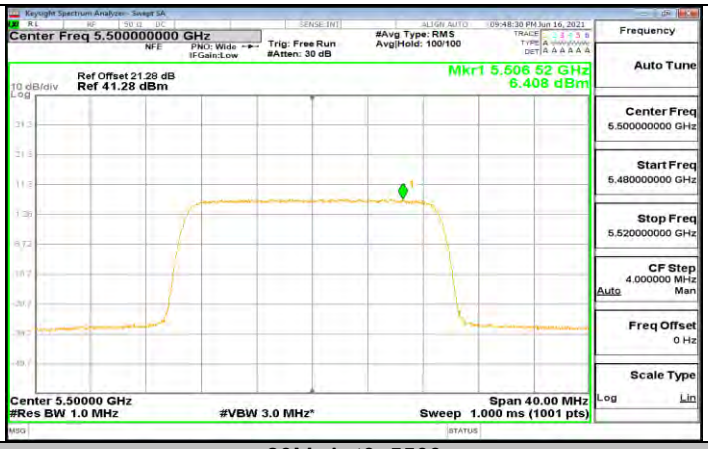

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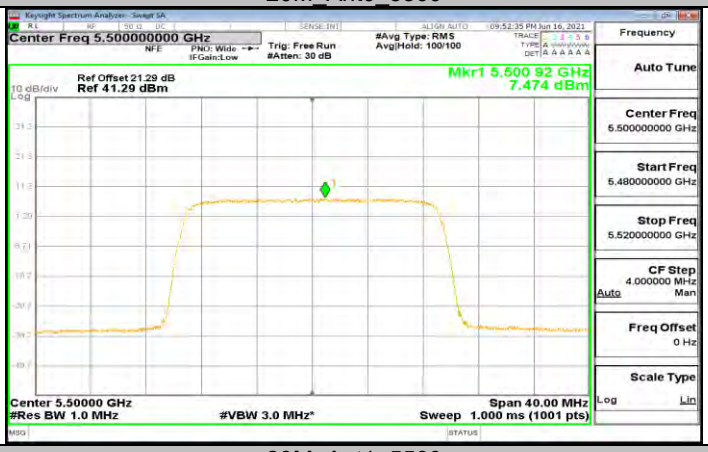

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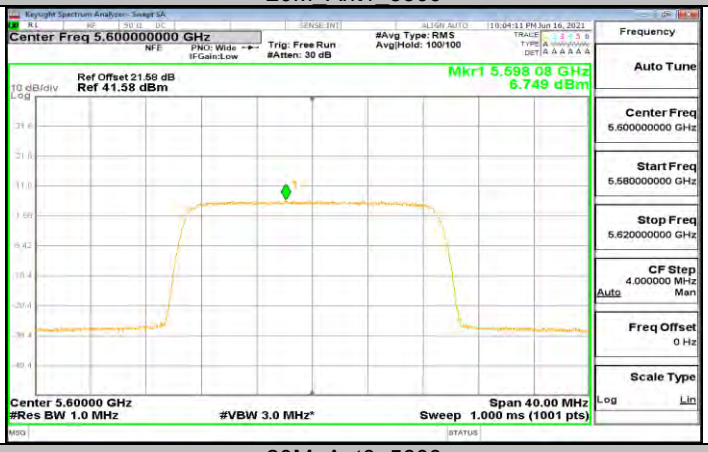

20M_Ant0_5600

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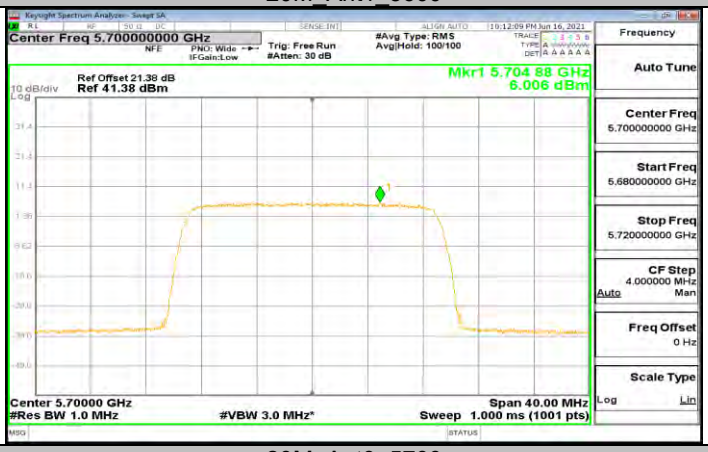
20M_Ant1_5600



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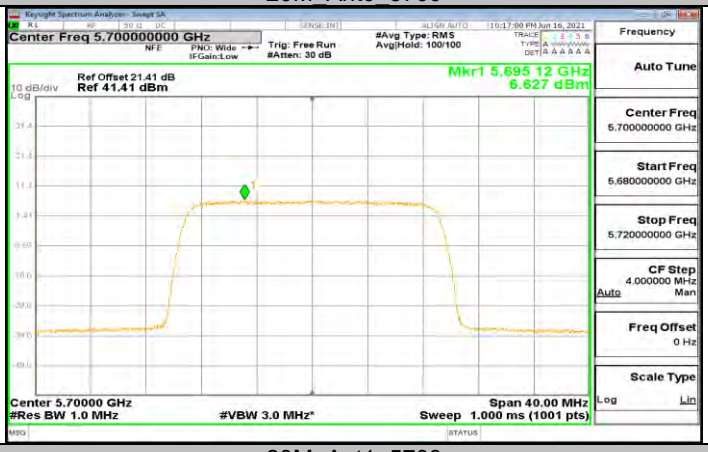

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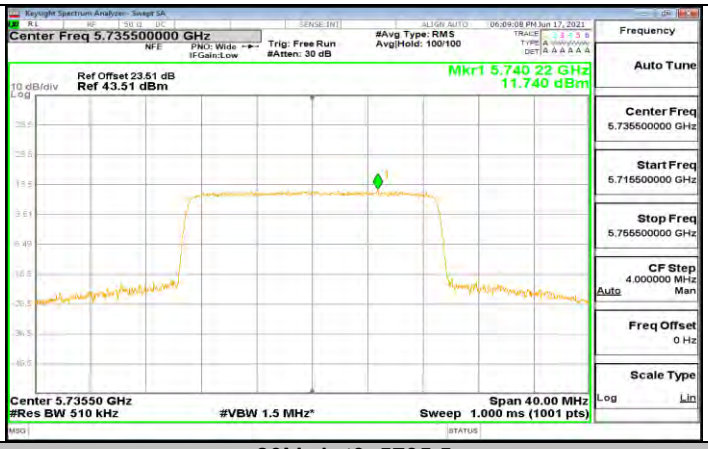

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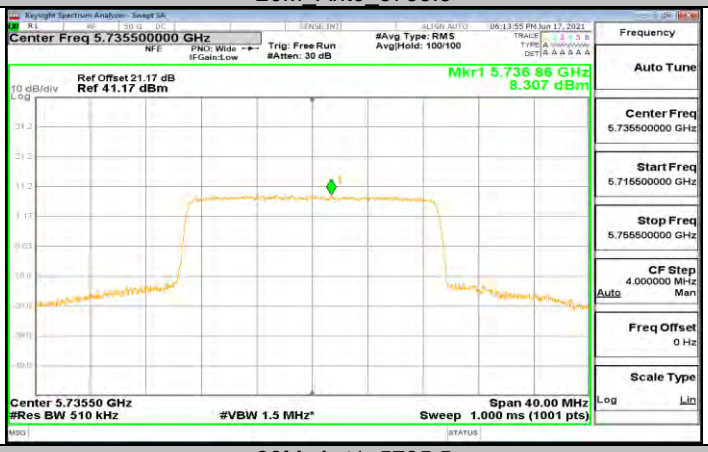

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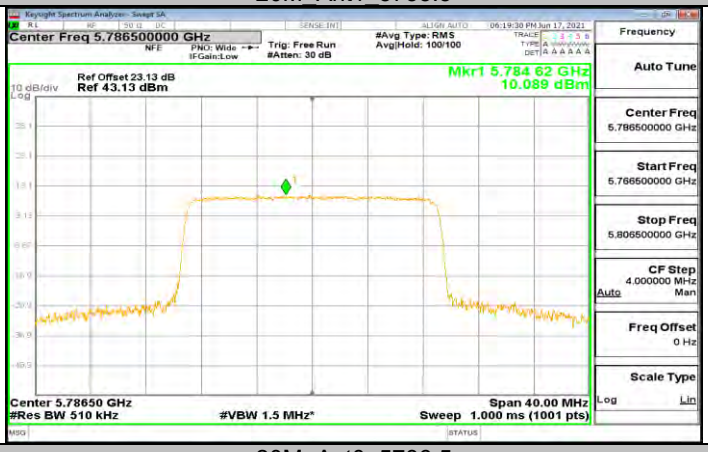

20M_Ant0_5786.5

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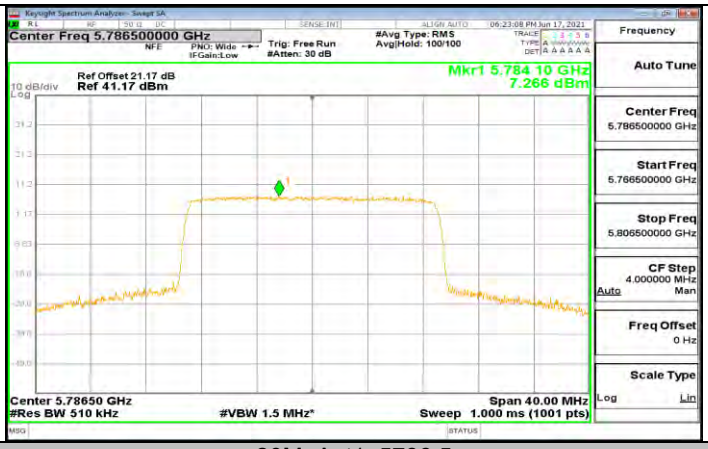

20M_Ant1_5786.5

20M_Ant0_5839.5

20M_Ant1_5839.5

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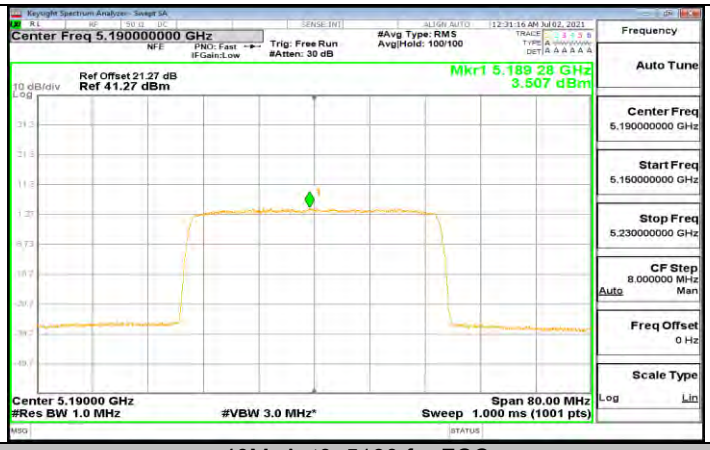
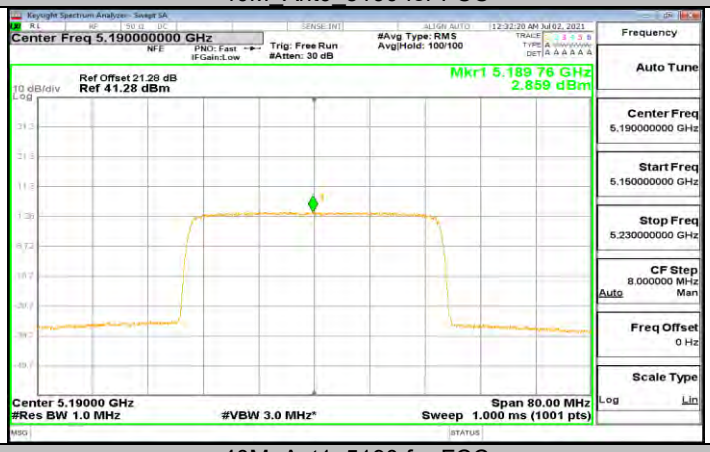


40M_Ant0_5190 for FCC



40M_Ant1_5190 for FCC

40M_Ant0_5230 for FCC

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40M_Ant1_5230 for FCC

40M_Ant0_5270

40M_Ant1_5270

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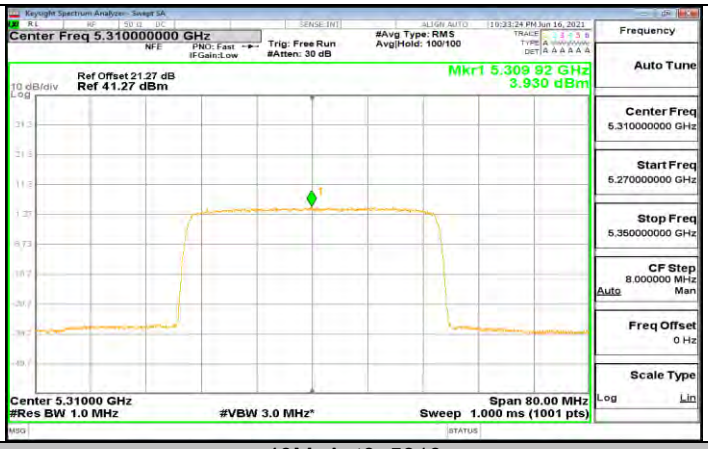
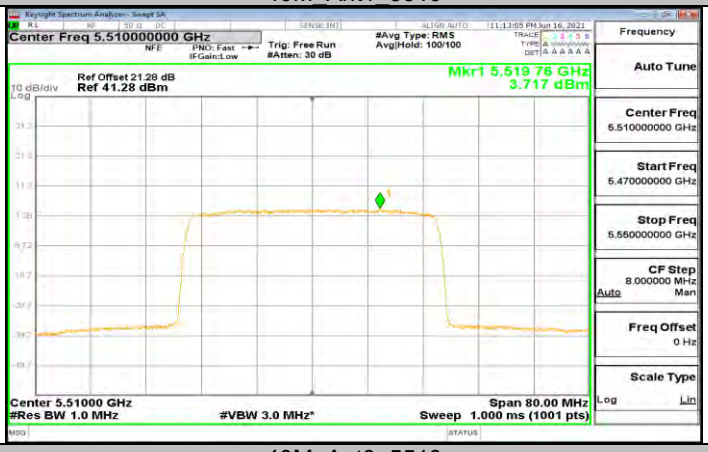


40M_Ant0_5310

40M_Ant1_5310



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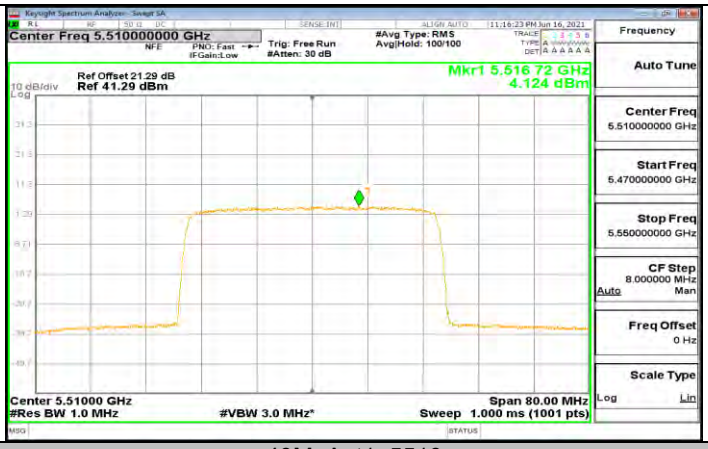

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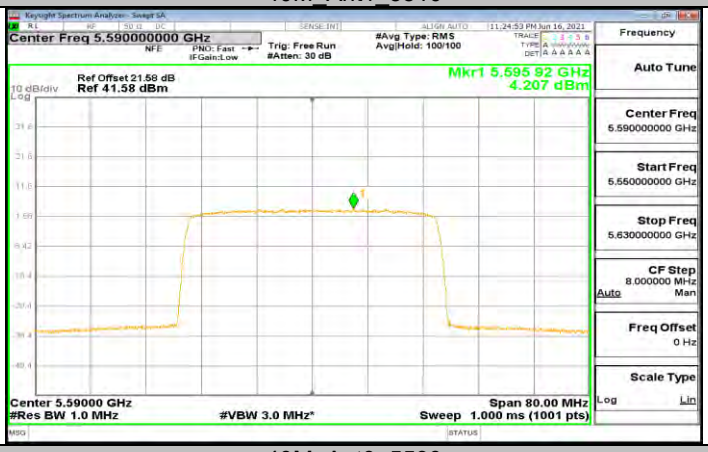

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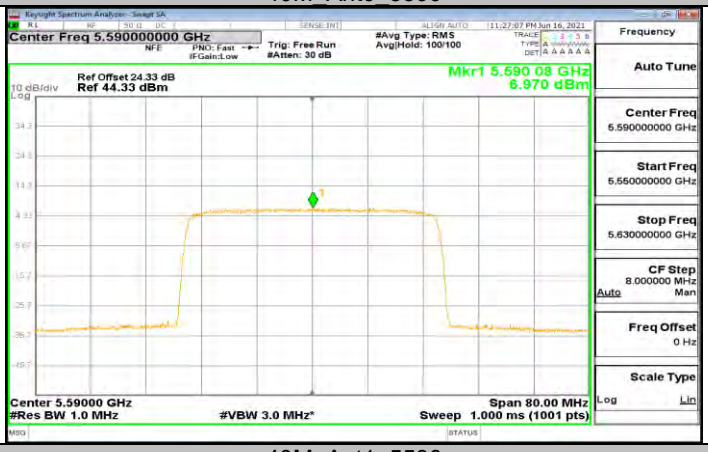

40M_Ant1_5590

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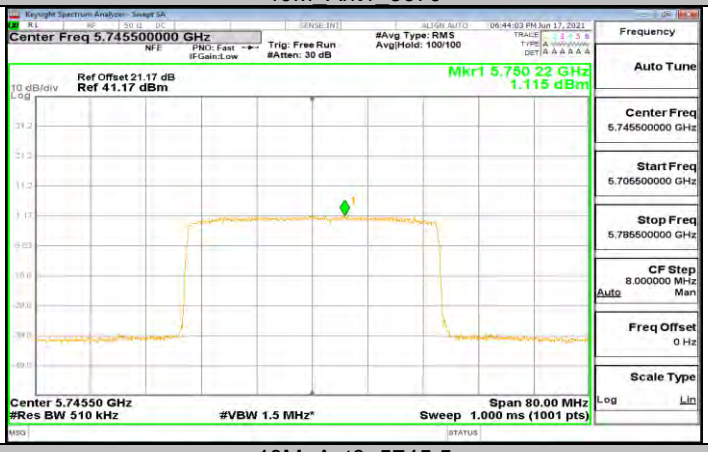
40M_Ant0_5670

40M_Ant1_5670



40M_Ant0_5745.5

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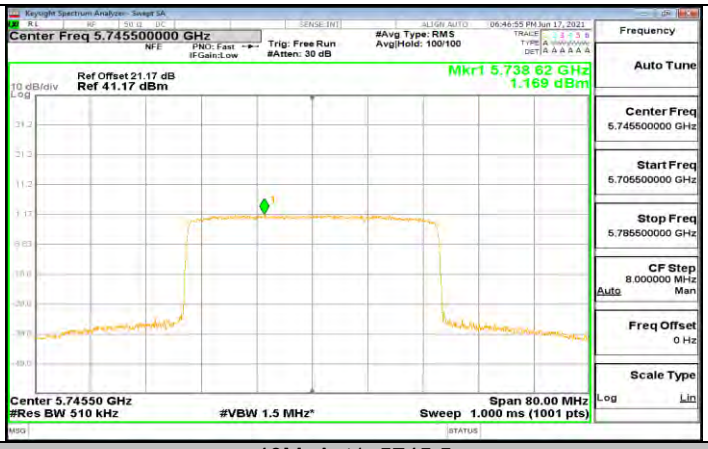

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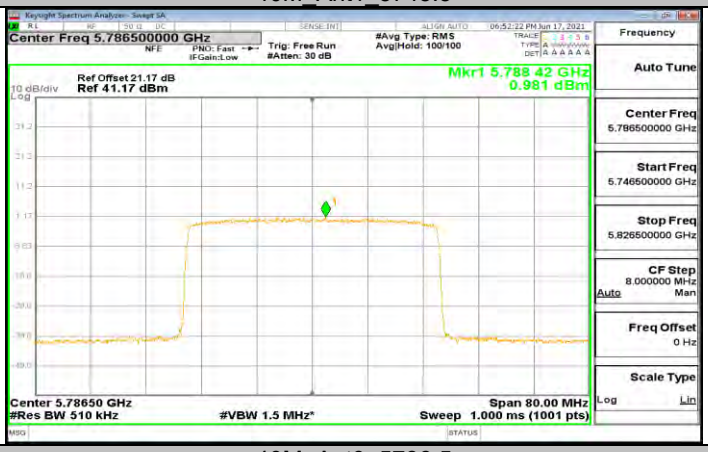

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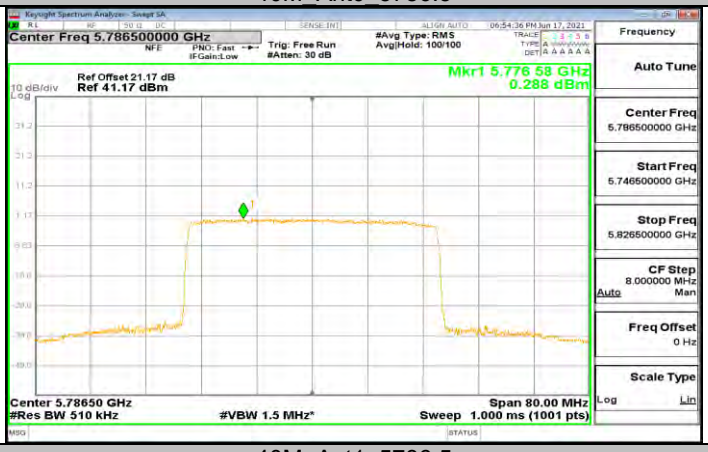

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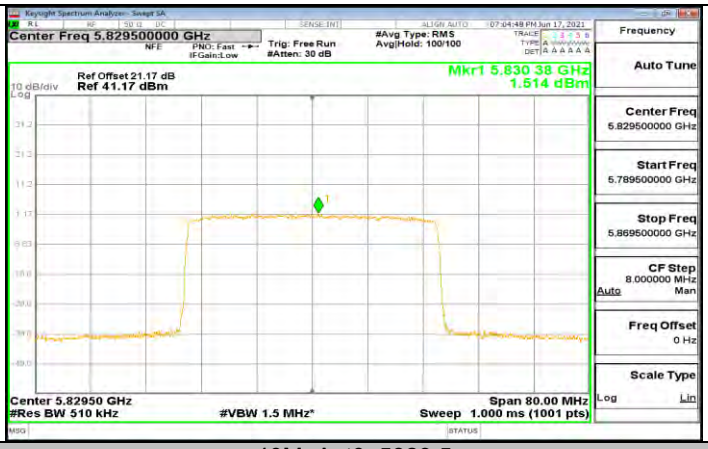

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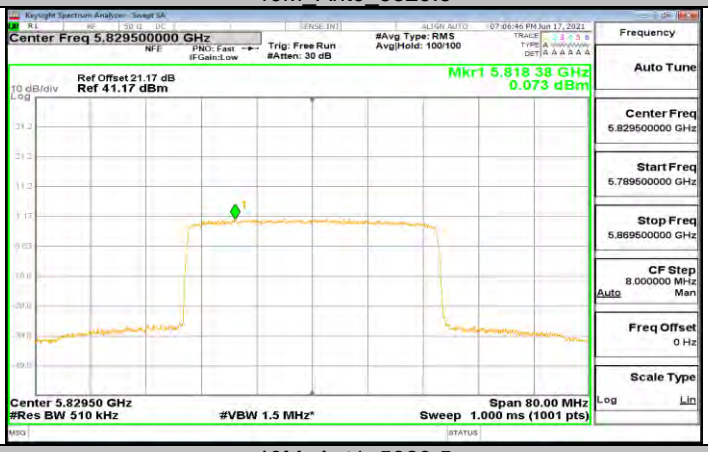

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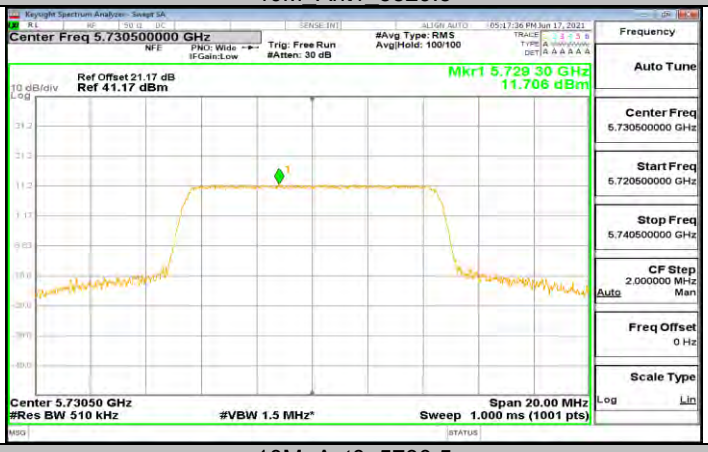

10M_Ant0_5730.5

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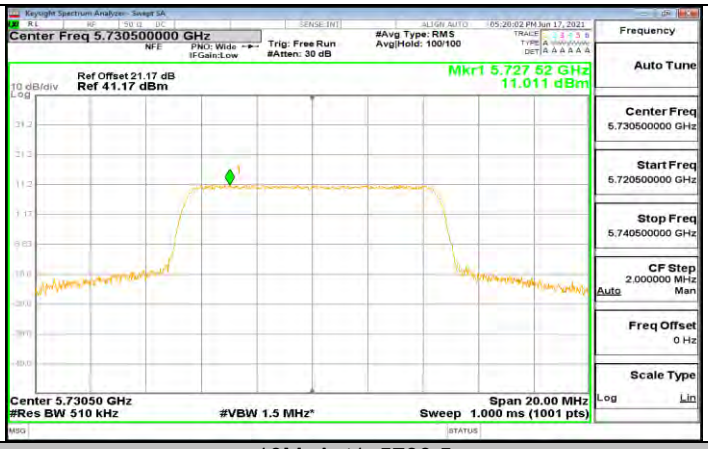

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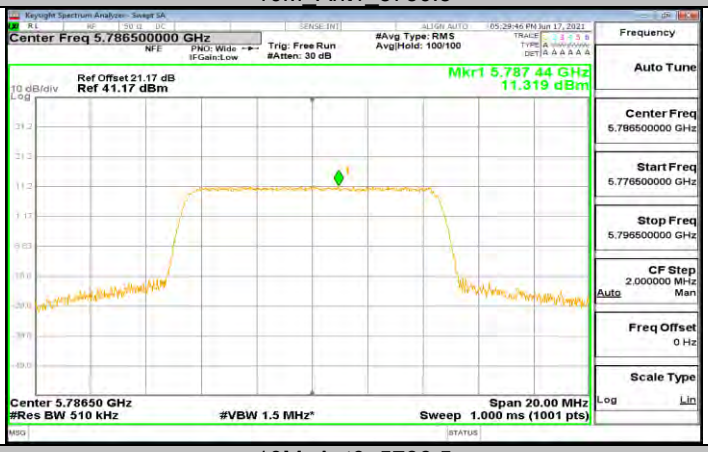

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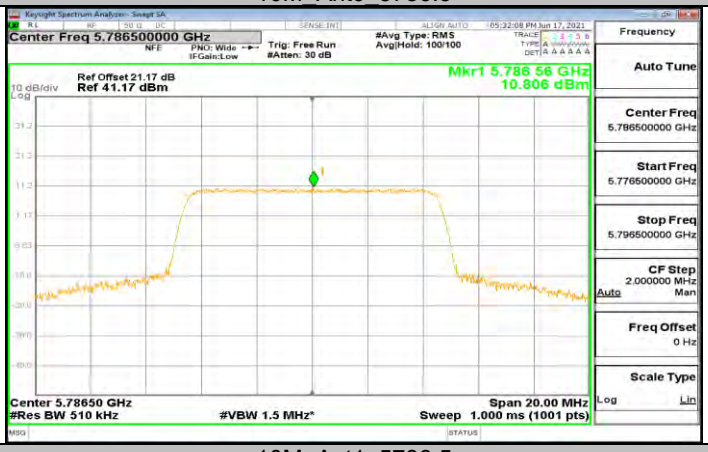

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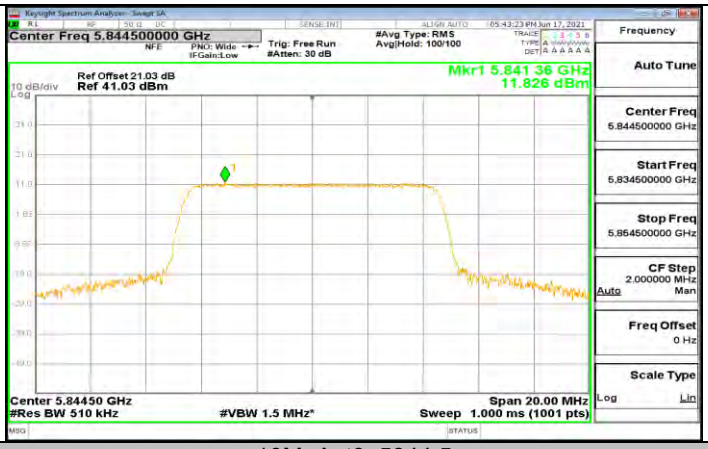

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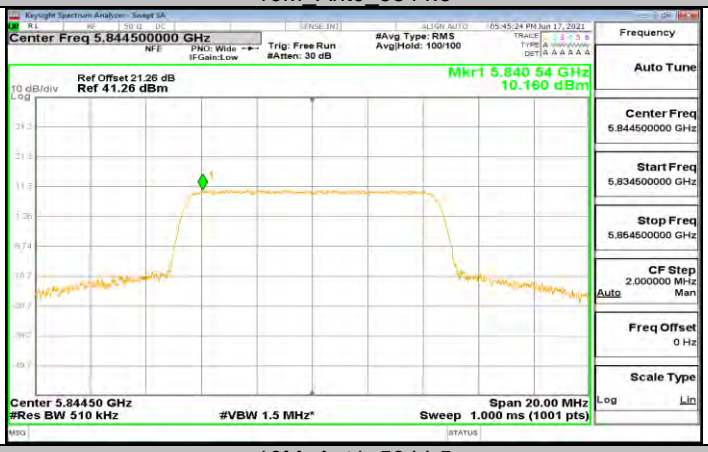

10M_Ant1_5844.5

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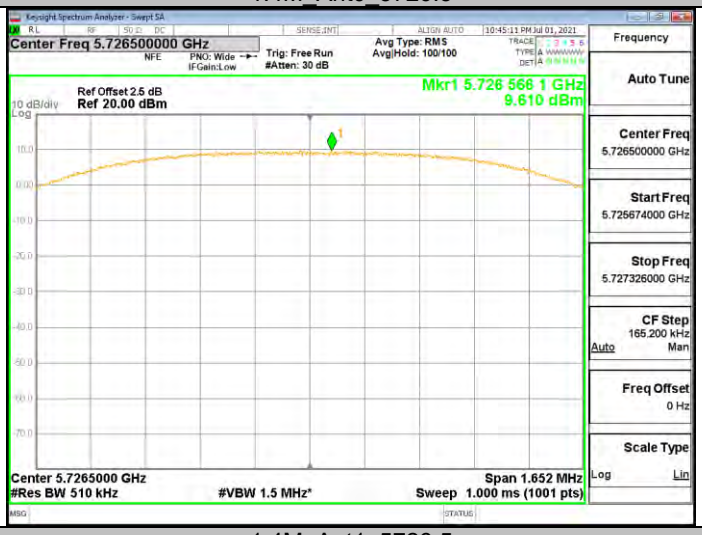
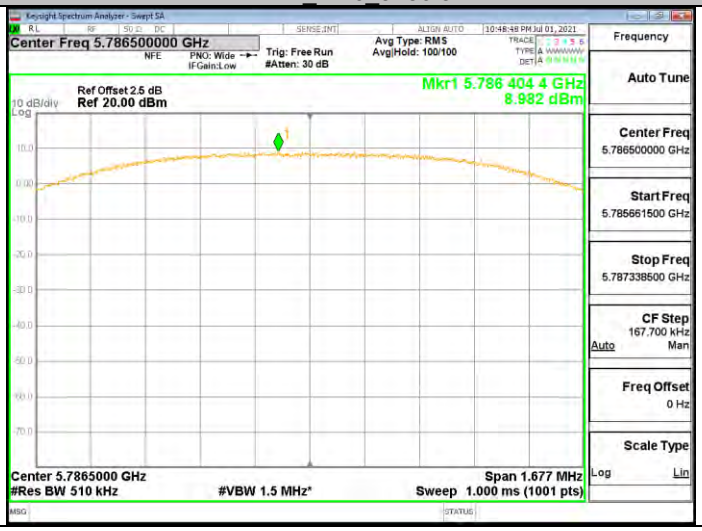
1.4M_Ant0_5726.5

1.4M_Ant1_5726.5
1.4M_Ant0_5786.5


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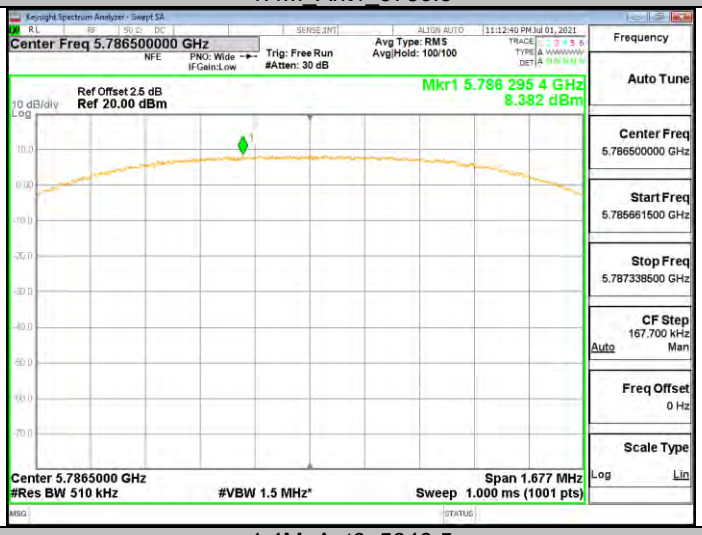
1.4M_Ant1_5786.5

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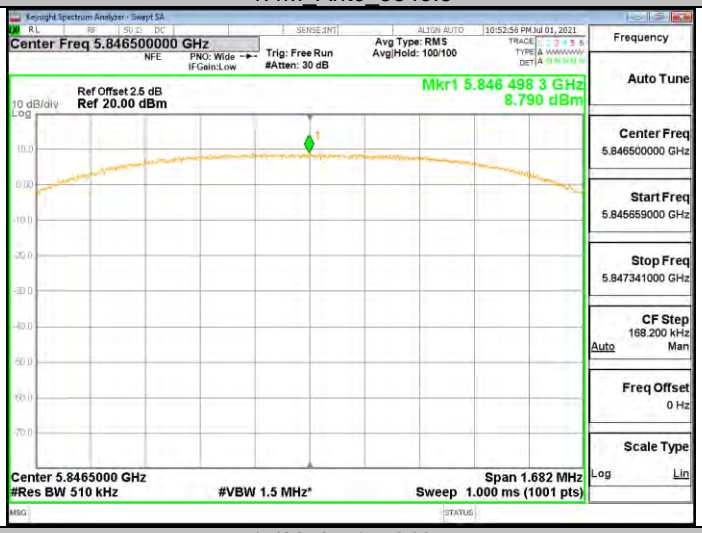
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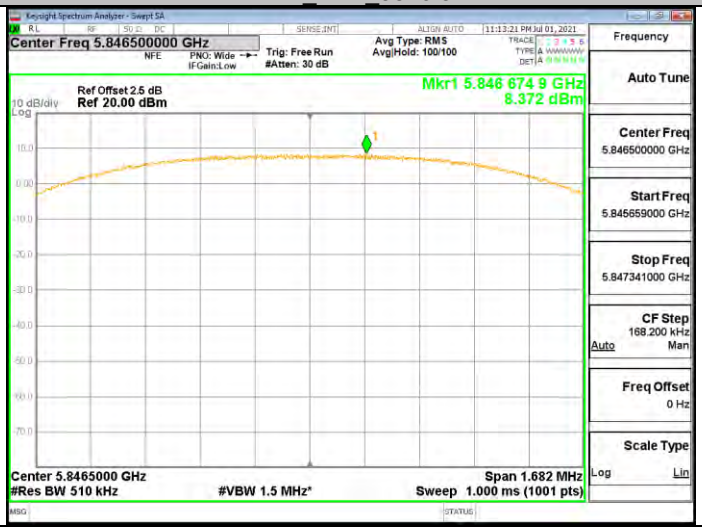

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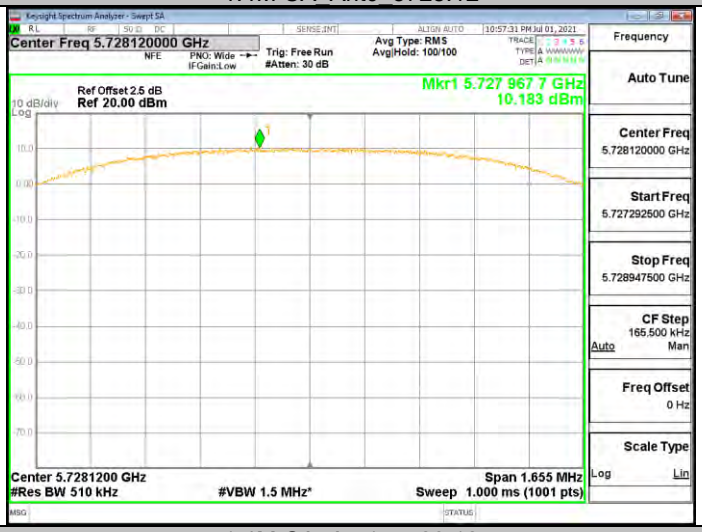
1.4M CA_Ant0_5728.12



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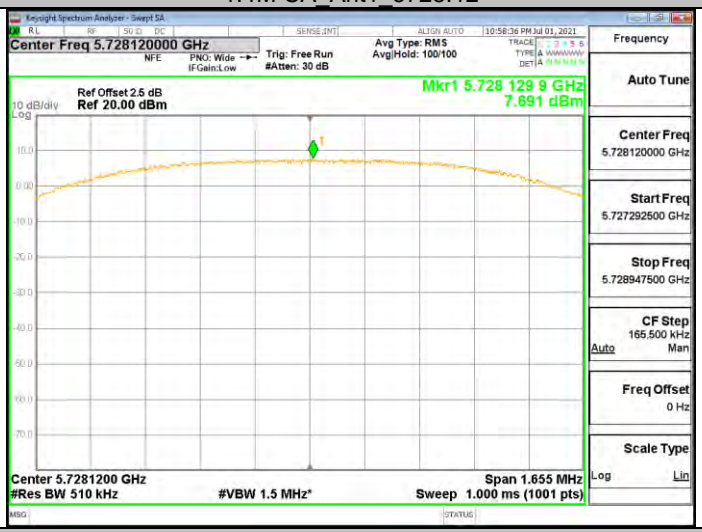

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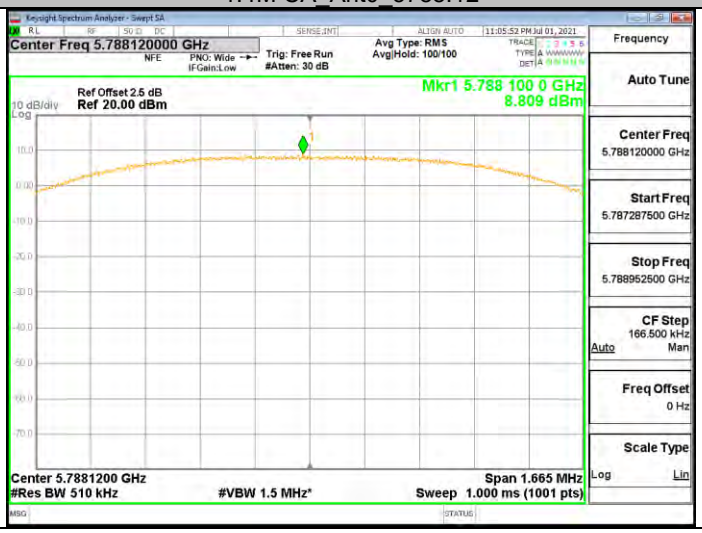

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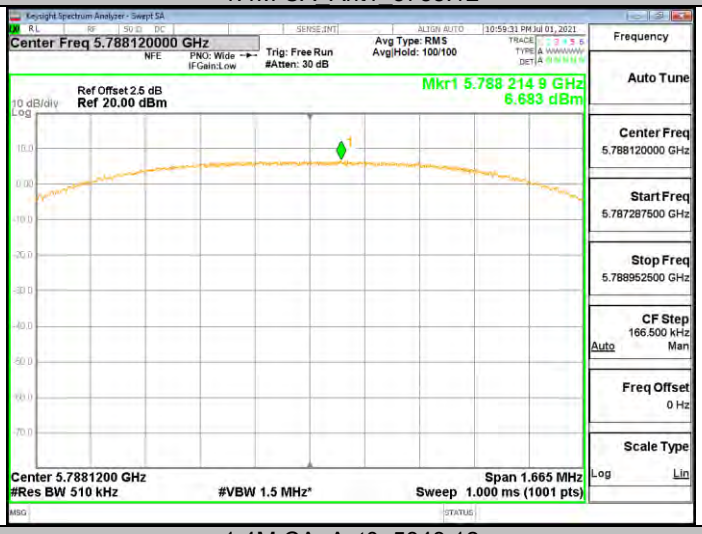
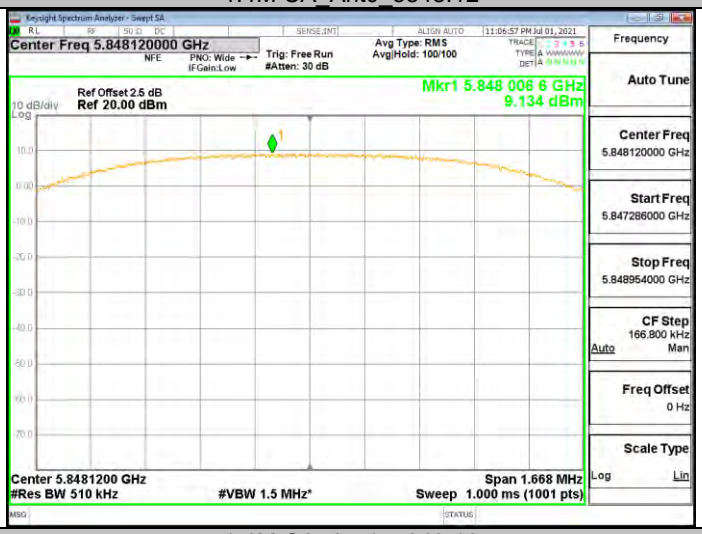
1.4M CA_Ant1_5788.12



1.4M CA_Ant0_5848.12



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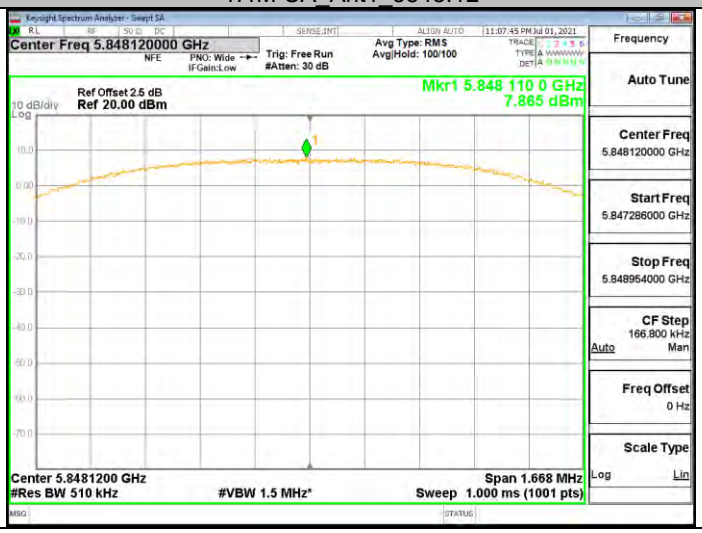

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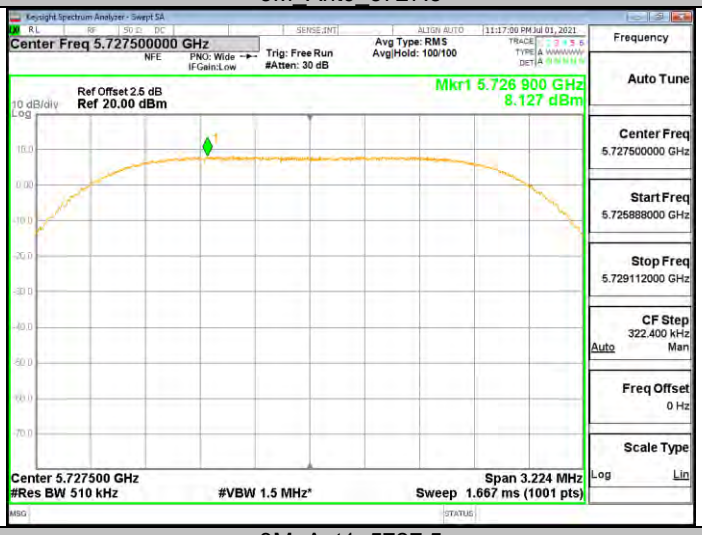
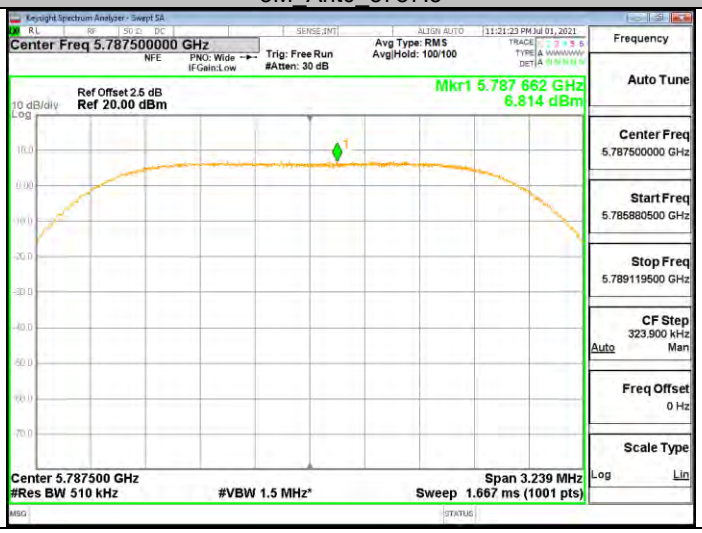
3M_Ant0_5727.5



3M_Ant1_5727.5

3M_Ant0_5787.5



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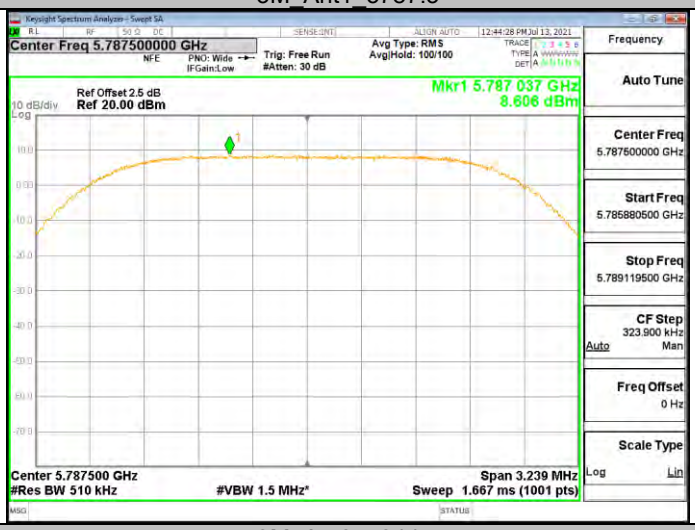
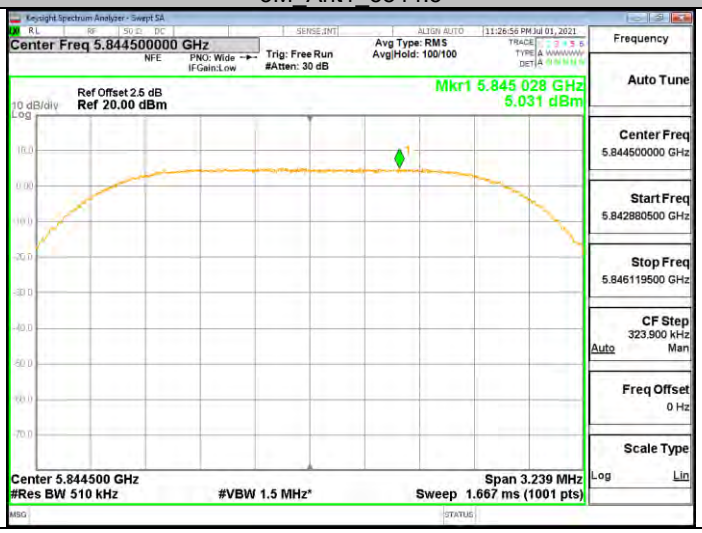
3M_Ant1_5787.5



3M_Ant0_5844.5

3M_Ant1_5844.5



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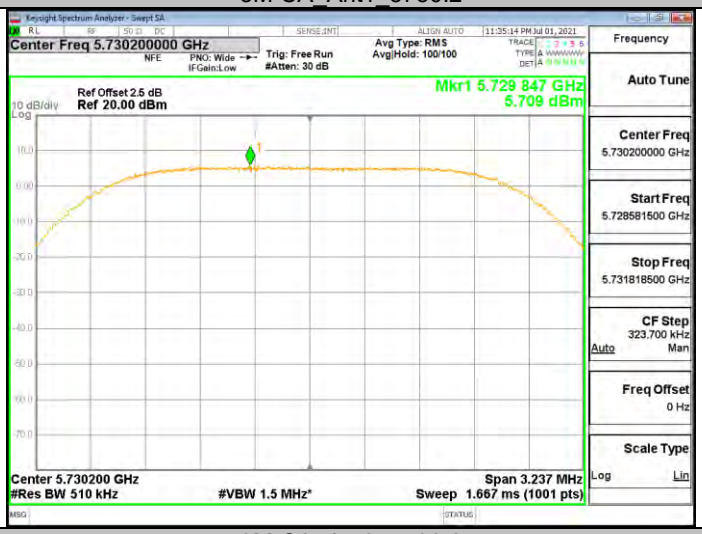
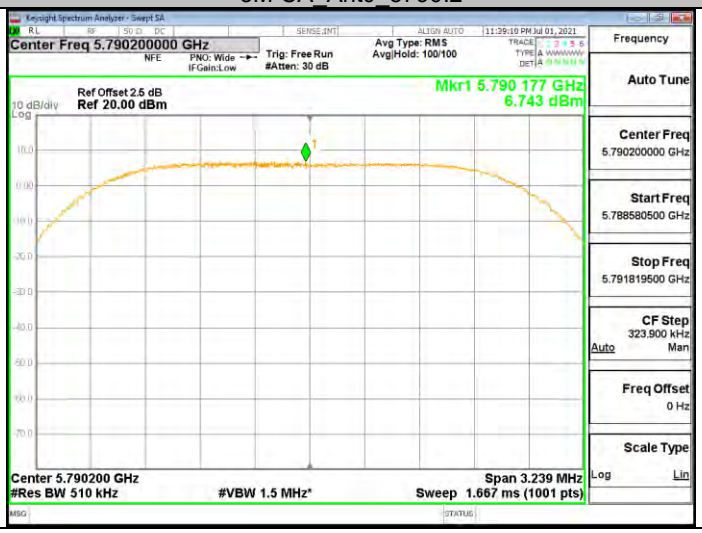
3M CA_Ant0_5730.2

3M CA_Ant1_5730.2



3M CA_Ant0_5790.2



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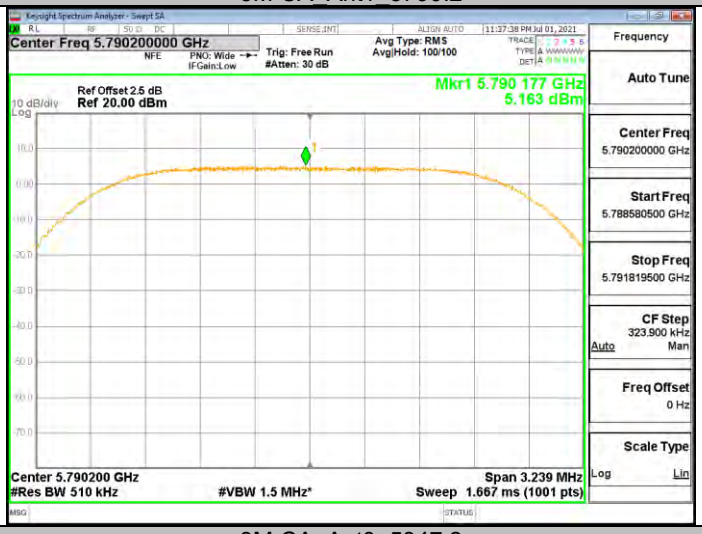
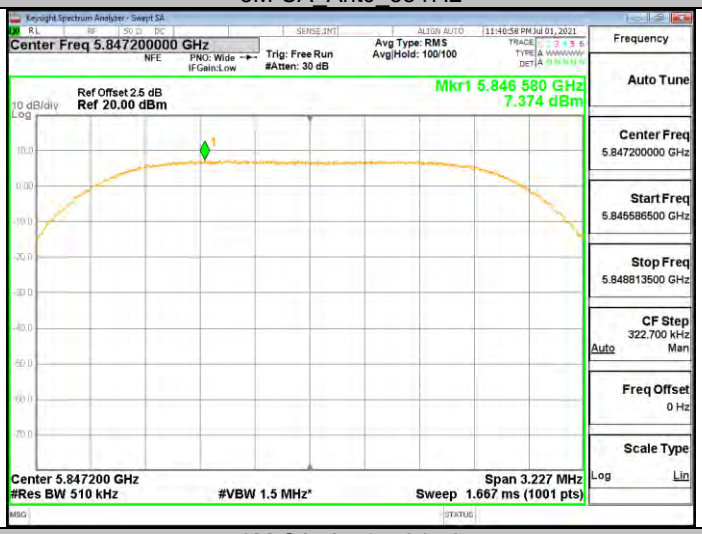
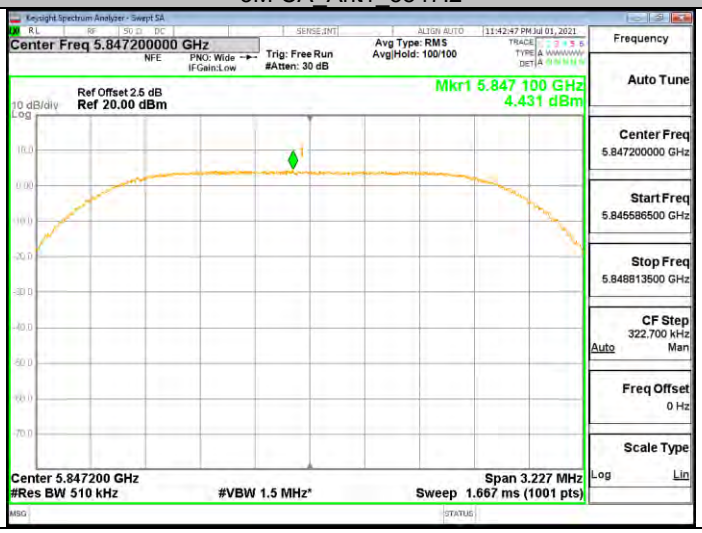
3M CA_Ant1_5790.2



3M CA_Ant0_5847.2



3M CA_Ant1_5847.2



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12.6. Appendix D: Duty Cycle

12.6.1. Test Result

Mode	On Time (msec)	Period (msec)	Duty Cycle x (Linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	1/T Minimum VBW (kHz)	Final setting For VBW (kHz)
20M	1	1	1.0000	100.00	0.00	1.00	0.01
40M	1	1	1.0000	100.00	0.00	1.00	0.01
10M	1	1	1.0000	100.00	0.00	1.00	0.01
1.4M	1	1	1.0000	100.00	0.00	1.00	0.01
1.4M CA	1	1	1.0000	100.00	0.00	1.00	0.01
3M	1	1	1.0000	100.00	0.00	1.00	0.01
3M CA	1	1	1.0000	100.00	0.00	1.00	0.01

Note:
Duty Cycle Correction Factor=10log (1/x).
Where: x is Duty Cycle (Linear)
Where: T is On Time
If that calculated VBW is not available on the analyzer then the next higher value should be used.

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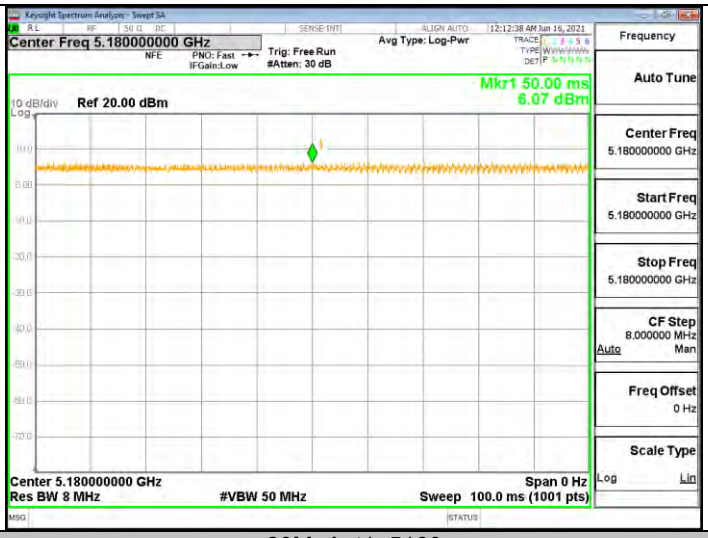
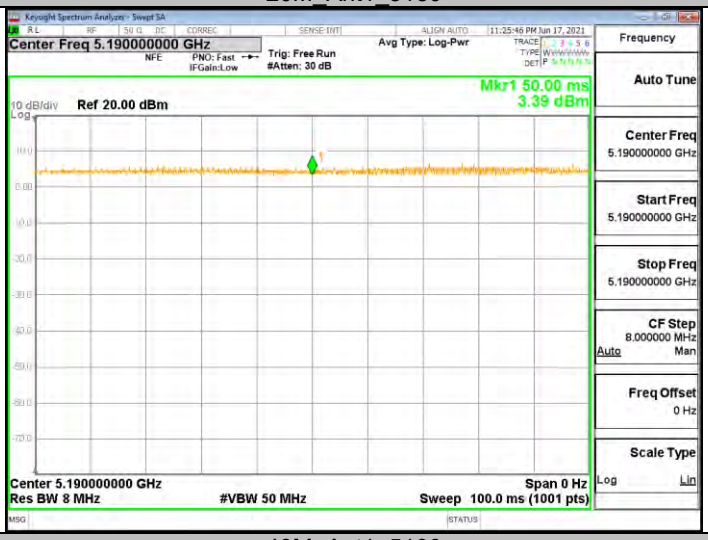
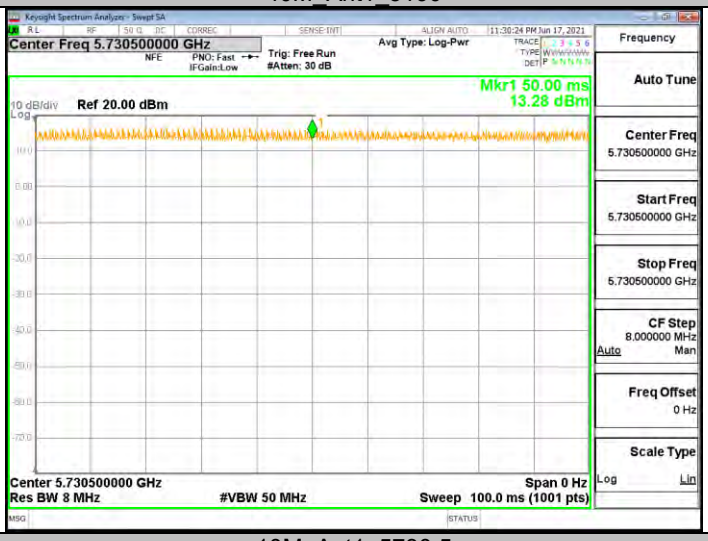
12.6.2. Test Graphs



20M_Ant1_5180



40M_Ant1_5190



10M_Ant1_5730.5

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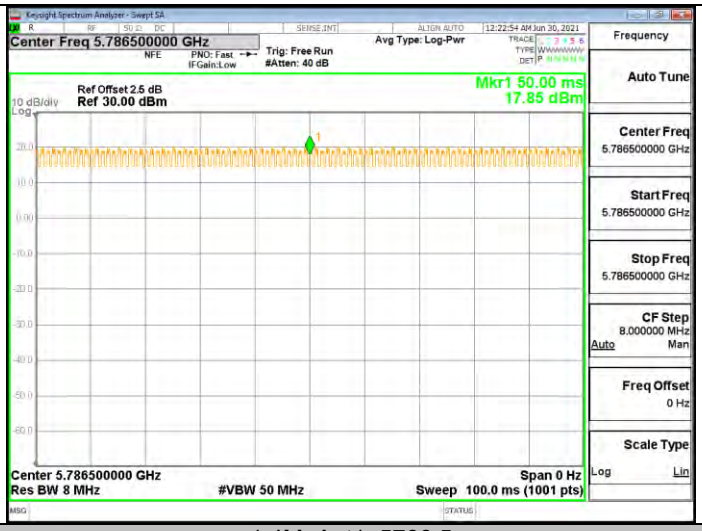
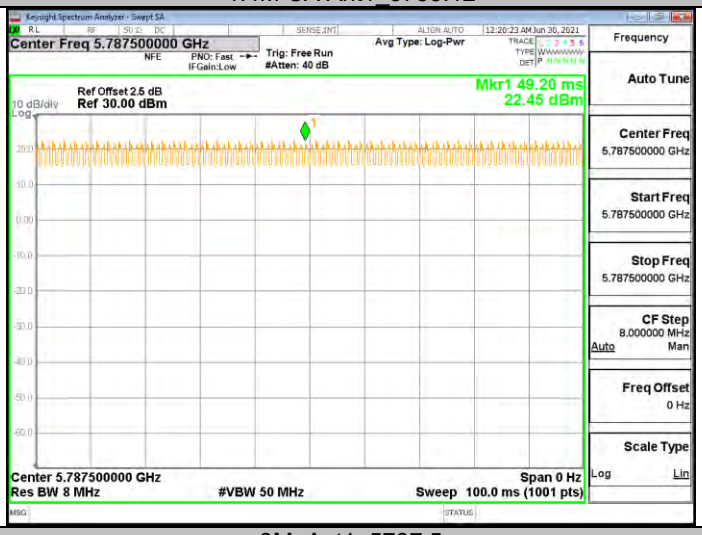


1.4M_Ant1_5786.5

1.4M CA Ant1_5788.12



3M_Ant1_5787.5

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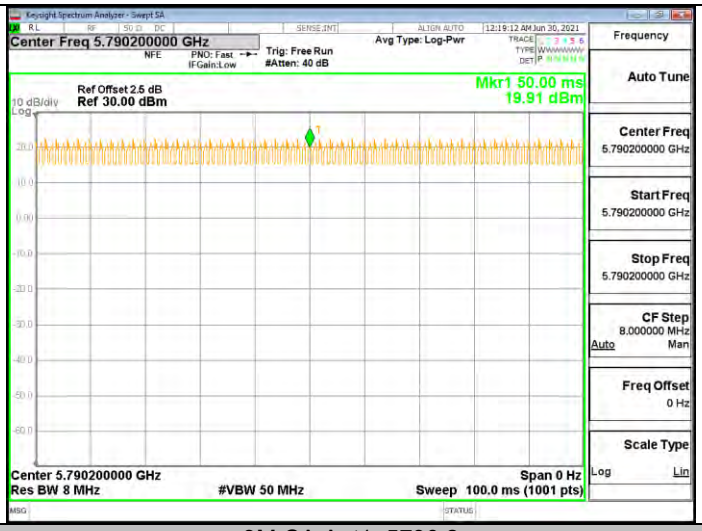

3M CA Ant1_5790.2

Note: All the modes have been tested, only the worst data was recorded in the report.

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12.7. Appendix E: Frequency Stability

12.7.1. Test Result

Frequency Error vs. Voltage									
SRD 20M:5200MHz									
Temp.	Volt.	0 Minute		2 Minute		5 Minute		10 Minute	
		Freq.Error (MHz)	Tolerance (ppm)	Freq.Error (MHz)	Tolerance (ppm)	Freq.Error (MHz)	Tolerance (ppm)	Freq.Error (MHz)	Tolerance (ppm)
T_N	V_L	5199.9992	-0.16	5200.0172	3.31	5200.0157	3.02	5200.0215	4.14
T_N	V_N	5200.0089	1.72	5199.9914	-1.66	5199.9915	-1.63	5199.9831	-3.25
T_N	V_H	5200.0001	0.02	5199.9758	-4.66	5200.0028	0.54	5200.0196	3.76
Frequency Error vs. Temperature									
SRD 20M: 5200 MHz									
Temp.	Volt.	0 Minute		2 Minute		5 Minute		10 Minute	
		Freq.Error (MHz)	Tolerance (ppm)	Freq.Error (MHz)	Tolerance (ppm)	Freq.Error (MHz)	Tolerance (ppm)	Freq.Error (MHz)	Tolerance (ppm)
45	V_N	5199.9863	-2.63	5199.9933	-1.30	5200.0211	4.06	5199.9848	-2.93
40	V_N	5200.0132	2.53	5200.0184	3.54	5200.0172	3.30	5199.9893	-2.06
30	V_N	5200.0207	3.99	5199.9974	-0.50	5200.0103	1.98	5199.9923	-1.48
20	V_N	5200.0187	3.60	5200.0101	1.94	5199.9847	-2.95	5200.0177	3.40
10	V_N	5200.0065	1.25	5200.0172	3.32	5199.9832	-3.22	5200.0181	3.49
0	V_N	5199.9834	-3.19	5199.9944	-1.08	5200.0040	0.76	5199.9797	-3.91
-10	V_N	5199.9800	-3.84	5200.0212	4.07	5199.9840	-3.07	5199.9806	-3.72

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Frequency Error vs. Voltage									
SRD 20M: 5839.5 MHz									
Temp.	Volt.	0 Minute		2 Minute		5 Minute		10 Minute	
		Freq.Error (MHz)	Tolerance (ppm)	Freq.Error (MHz)	Tolerance (ppm)	Freq.Error (MHz)	Tolerance (ppm)	Freq.Error (MHz)	Tolerance (ppm)
T_N	V_L	5839.4965	-0.60	5839.5218	3.73	5839.5046	0.80	5839.5054	0.92
T_N	V_N	5839.5047	0.81	5839.4857	-2.45	5839.4954	-0.78	5839.4990	-0.17
T_N	V_H	5839.4761	-4.10	5839.4795	-3.52	5839.4767	-3.98	5839.5203	3.47
Frequency Error vs. Temperature									
SRD 20M: 5839.5 MHz									
Temp.	Volt.	0 Minute		2 Minute		5 Minute		10 Minute	
		Freq.Error (MHz)	Tolerance (ppm)	Freq.Error (MHz)	Tolerance (ppm)	Freq.Error (MHz)	Tolerance (ppm)	Freq.Error (MHz)	Tolerance (ppm)
45	V_N	5839.5104	1.77	5839.4932	-1.16	5839.5063	1.08	5839.5157	2.68
40	V_N	5839.4919	-1.39	5839.5055	0.94	5839.5243	4.17	5839.5023	0.39
30	V_N	5839.4922	-1.34	5839.5201	3.44	5839.5108	1.86	5839.4958	-0.73
20	V_N	5839.5163	2.79	5839.4800	-3.42	5839.5025	0.43	5839.5021	0.36
10	V_N	5839.4996	-0.07	5839.4862	-2.36	5839.4801	-3.40	5839.5010	0.18
0	V_N	5839.4926	-1.26	5839.5079	1.36	5839.5118	2.02	5839.5126	2.16
-10	V_N	5839.4932	-1.16	5839.4760	-4.12	5839.5153	2.62	5839.5189	3.24

Note: All the modes have been tested, only the worst data was recorded in the report.

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12.8. Appendix F: Dynamic Frequency Selection

12.8.1. Test Result

DFS In-Service Monitoring (5510 MHz; 40 MHz)

Test according to FCC title 47 part 15 §15.407(h), KDB 905462 D02 U-NII DFS Compliance Procedures New Rules v02

Note: The master-client pair communicate with the master device transmitting on a non-DFS channel while performing DFS CAC and in service monitoring on the DFS channel. The client device (EUT) downlink channel in the non-DFS band is used to listen to the master device and only transmits on the uplink DFS channel after receiving confirmation from the master that the DFS uplink channel is available following the master device CAC. Once the DFS band uplink channel is available the client device continues to monitor the downlink channel for information to clear the channel whenever the master device detects radar on the uplink channel. For the purposes of testing the master-client downlink was established on ISM frequency band (narrowband signal frequency band in 2403.5MHz-2471.12MHz or 5726.5MHz-5848.12MHz) and the client-master uplink was established on the DFS channel to be tested (5510 MHz). Radar was applied to the master device on the uplink channel (5510 MHz) and time for the client to clear the channel was measured. Testing was done as required by KDB 905462 with the client operating on the widest available channel bandwidth (40MHz).

Measurement Summary

DUT Frequency (MHz)	Radar Type No.	Type of Measurement value	Overall Result
5510.000000	0	Channel Move Time	PASS
5510.000000	0	Channel Closing Transmission Time	PASS
5510.000000	0	Non-occupancy period	PASS

(continuation of the "Measurement Summary" table from column 4 ...)

Channel Move Time Detailed Results

DUT Frequency (MHz)	Radar Type No.	CMT Tx Time (s)	CMT Limit (s)	CMT Result
5510.000000	0	0.000	10.000	PASS

(continuation of the "Channel Move Time Detailed Results" table from column 5 ...)

DUT Frequency (MHz)	CMT Comment
5510.000000	Tx Time value is last trailing edge found within sweep. See Note 1.

Channel Closing Transmission Time Detailed Results

DUT Frequency (MHz)	Radar Type No.	CCTT Type of Value	CCTT No. of Pulses found	CCTT Tx Time (ms)
5510.000000	0	first 200 ms	0	0.000
5510.000000	0	remaining 10.0 second(s) period	0	0.000

(continuation of the "Channel Closing Transmission Time Detailed Results" table from column 5 ...)

DUT Frequency (MHz)	CCTT Tx Time Limit (ms)	CCTT Result	CCTT Comment
5510.000000	200.000	PASS	See Note 1.
5510.000000	60.000	PASS	See Note 1.

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Non-occupancy period Detailed Results

DUT Frequency (MHz)	Radar Type No.	NOP No. of Pulses found	NOP No. of Pulses Limit	NOP Tx Time (s)	NOP Tx Time Limit (s)
5510.000000	0	0	0	0.000	0.000

(continuation of the "Non-occupancy period Detailed Results" table from column 6 ...)

DUT Frequency (MHz)	NOP Result
5510.000000	PASS

Radar level verification

Description / Formula	Value	Unit
IF(({DFS Mode(0/1/2)}=0)or({DFS Mode(0/1/2)}=1) , IF((dBm2W({Nominal Power[dBm]})>0.2) , -64 , IF(({Configured PSD[dBm]}<10) , -62 , -64))+ {Attenuation Vector Generator to Master Device [dB]} , -50+ {Attenuation Vector Generator to COMP[dB]})+ {Radar Signal Level Offset[dB]}	Given setting / formula to calculate Vector Generator level	--
Configured Master Device EIRP:	NA	mW
Configured Master Device PSD:	NA	dBm/MHz
Requirement of the Detection threshold value for this given values acc. to FCC clause 5.2 / Table 3	-62	dBm
Vector Generator level setting	-0.91	dBm
Configured overall pathloss from Vector Generator RF out to Master Device connector of ' Master Device to OSP'-	60.09	dB
Given additional level added to the amplitude of the waveform to account for variations in measurement equipment acc. to FCC clause 5.2 / Table 3 / Note 2	1.00	dB
This results in the following radar signal level at the Master Device	-61.00	dBm

Additional Information

Note	Description
Note 1:	Because of the radar pulse event at the beginning, the investigation of the trace begins with an offset of 28.7 ms conforming to the end of the Radar burst.
Note 2:	Channel move time (CMT) / channel closing transmission time (CCTT) measurement was made with hi resolution video sweep using OSP DAQ channel
Note 3:	Because of the substantially higher sampling rate of the video signal the results for CCTT and CMT are more accurate than in the graphics visible. Reached timing accuracy of the video trace: approx 4 µs
Note 4:	The Non-Occupancy Period trace starts at the end of the Channel move time trace (20.000 secs.) Labeling of the x-axis (time) is relative to its beginning (0 secs.)

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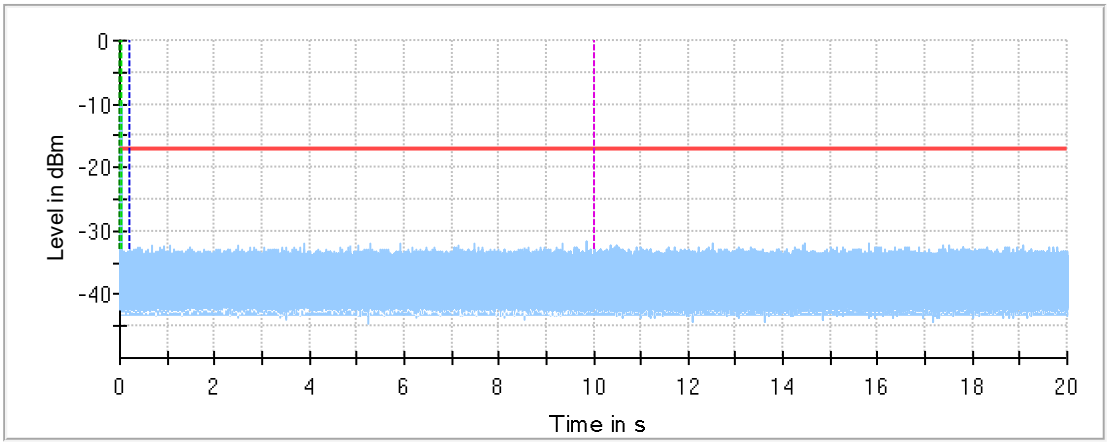
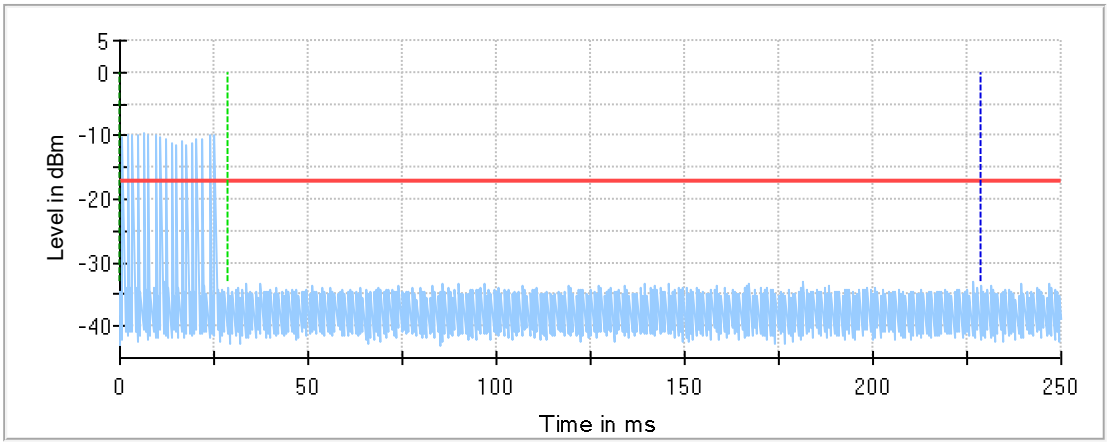
Channel Move Time



Channel Move Time
Start of Radar
First 200ms of Channel Closing Tx Time
Threshold
Trigger at end of Radar
10sec Channel Move Time Limit

Channel Move Time first 200ms



Channel Move Time first 200ms
Start of Radar
First 200ms of Channel Closing Tx Time
Threshold
Trigger at end of Radar

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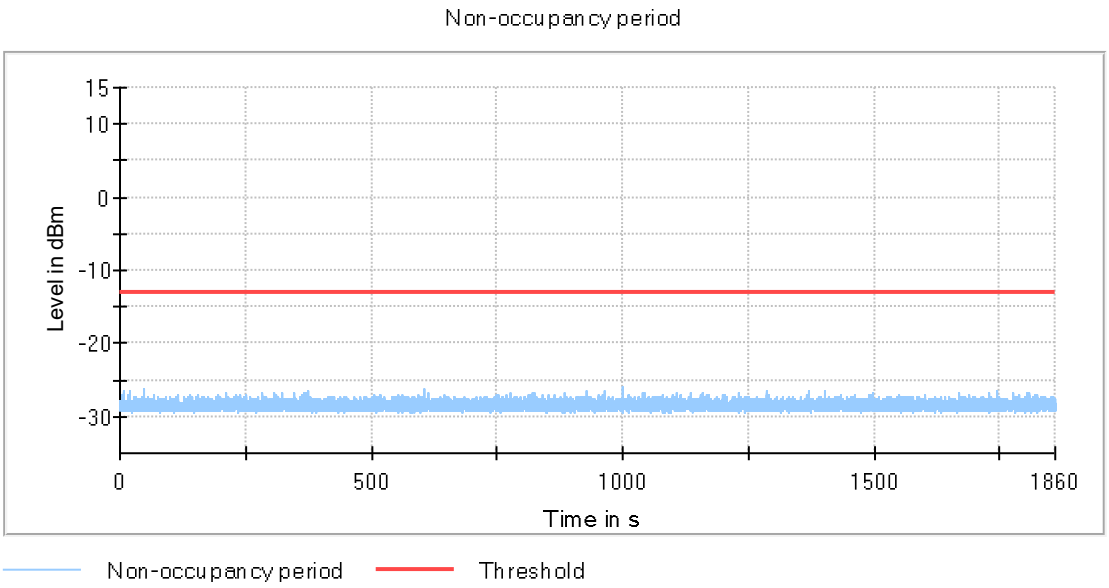

Note: All the modes have been tested, only the worst data was recorded in the report.

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